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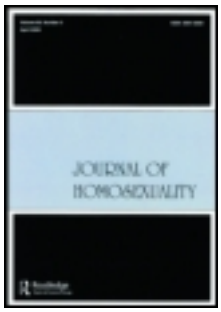

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A Comparison of Mental Health, Substance Use, and Sexual Risk Behaviors Between Rural and Non-rural Transgender Persons

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A Comparison of Mental Health, Substance Use, and Sexual Risk Behaviors Between Rural and Non-rural Transgender Persons

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Abstract

The aim of this study was to compare the mental health, substance use, and sexual risk behaviors of rural and non-rural transgender persons. Online banner advertisements were used to recruit 1,229 self-identified rural and non-rural transgender adults (18+ years) residing in the US. Primary findings include: significant differences in mental health between rural and non-rural transmen; relatively low levels of binge drinking across groups, although high levels of marijuana use; and high levels of unprotected sex among transwomen. The results confirm that

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mental and physical health services for transgender persons residing in rural areas are urgently needed.

KEYWORDS transgender, rural, urban, online survey

Introduction

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The transgender population is a diverse group of individuals who transcend culturally defined categories of gender, and include transsexuals (who seek medical intervention to feminize or masculinize their body), crossdressers (who wear clothing typically associated with the other sex), drag queens and kings (female and male impersonators), and other gender variant individuals (Bockting, 1999). It has been argued that transgender persons form a unique community with distinct norms and practices that differ from persons identifying as either exclusively male or female (Valentine, 2007). Whether transgender persons live outside the gender binary, or transition into a female or male identities, their health needs are distinct from persons whose sex assigned at birth align with their gender identity (Mayer et al. 2008; Feldman & Bockting, 2003).

Transgender persons have been estimated to comprise about 0.2% of the US population overall (Mathy, 2002), but carry a disproportionate burden of heath disparities that include both physical and mental health problems (Bauer, Travers, Scanlon, & Coleman, 2012; Committee on Lesbian Gay Bisexual and Transgender Health Issues and Research Gaps and Opportunities, Board on the Health of Select Populations, & Institute of Medicine, 2011; Nuttbrock et al., 2012). A recent review of transgender persons in the US found that approximately 28% were infected with HIV

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and 21% were infected with other sexually transmitted infections, with highest infection rates among transgender women of color (Herbst et al., 2008). Another study showed that nearly 52% of transgender persons (compared to 22% of non-transgender persons) living in Los Angeles reported HIV infection, with highest rates among Black participants (Edwards, Fisher, & Reynolds, 2007). In addition, studies of transgender samples show high rates of depression (44%), anxiety (33%; Bockting et al., in press), alcohol use (Operario, Nemoto, Iwamoto, & Moore, 2011; Ramirez-Valles, Garcia, Campbell, Diaz, & Heckathorn, 2008), attempted suicide (Liu & Mustanski, 2012); and illicit drug (27%) and hormone (34%) use (Herbst et al., 2008). Despite the clear need to address the concerns facing transgender persons, many of the needed services are not available either because of lack of resources, or due to stigma and discrimination (Grant, Mottet, Tanis, Herman, Harrison, & Keisling, 2011).

Environmental circumstances, including place of residency, are recognized as important determinants that impact the health of groups and individuals (Jackson, 2003). Of particular concern may be availability of services and qualified providers in rural communities. Studies show that rural communities may not be well equipped to meet the needs of underserved individuals, resulting in higher mental and physical health disparities for persons residing in less populated areas compared to those in urban communities (Chu & Selwyn, 2008; Leira, Hess, Torner, & Adams, 2008; Thorpe, Van Houtven, Sleath, & Thorpe, 2010). A study of HIV service utilization by people living with HIV in different-sized communities showed that rural residents were less likely to attend four or more healthcare appointments per year and less likely to receive antiretroviral medication for HIV infection if they were Black (Wilson et al., 2011). Similarly, the availability of providers to manage testosterone therapy among transgender

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patients may be particularly sparse in rural areas; this is problematic since at least one study showed that transgender persons receiving testosterone therapy reported significantly higher quality of life than those who were not receiving such services (Newfield, Hart, Dibble & Kohler, 2006).

Studies of transgender persons residing in urban areas show high rates of healthcare utilization. In a recent stud of male-to-female transgender persons, 77% of participants had healthcare insurance and 81% had seen a primary care doctor in the past year, with these factors associated with reductions in several high-risk behaviors (Sanchez, Sanchez, & Danoff, 2009). In comparison, little research to date has been conducted to document the experiences of rural transgender persons; however, small qualitative studies show that lesbian, gay, bisexual, and transgender (LGBT) populations in rural settings have distinct health needs. In addition to lack of healthcare resources, poor transportation infrastructure is a structural barrier to the provision of services in rural areas, while lack of community and a hostile social climate emerge of social barriers among rural LGBT populations in the US (Oswald & Culton, 2003; Willging, Salvador, Kano, 2006; Drumheller &McQuay, 2010; King and Dabelko-Schoeny, 2009). Although not all of the studies included transgender participants, it is reasonable to anticipate that transgender persons in rural settings face similar challenges. Moreover, a study of 20 mental health providers in New Mexico showed that most believed that there is no difference in their work with LGBT and non-LGBT clients (Willging, Salvador, & Kano, 2006). The authors of this study suggest that this “therapeutic neutrality” may impede effective service delivery for LGBT individuals residing in rural areas.

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Despite the potentially high burden of mental and physical problems facing transgender persons in rural setting, most studies of transgender individuals have been conducted in US urban population centers with relatively large concentrations of transgender individuals. To date, no studies have compared the sexual, mental health, and substance use profiles of transgender persons residing in rural areas to those residing in non-rural areas. Given the considerable health disparities faced by transgender persons, there is an urgent need for a greater understanding of the needs of transgender persons living in the rural US. The overall aim of this paper is to address this gap in understanding to begin to identify what resources are most urgently needed for transgender persons residing in the rural US.

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Methods

Recruitment and Participants

Data for the current study were collected as part of a larger investigation of the influence of gender on HIV risk among the U.S. transgender population. Participants were recruited using banner advertisements on transgender community websites and messages posted to online mailing lists, journals, and forums. To be eligible for the study, persons must have self identified as transgender (defined as transsexual, cross-dresser/transvestite, drag queen/king, or other transgender), be 18 years of age or older, have lived in the United States at the time the survey was completed. To be inclusive and obtain diversity in transgender identities, sampling was stratified by setting an enrollment quota for each type of transgender identity. This resulted in a large convenience sample of 1,229 participants. The demographics of this sample compared to

the U.S. census data indicated a wide geographic distribution across the country that largely approximated the relative general population size; as a group, participants were younger; more likely to identify as White (non-Hispanic) or multiracial (less likely as Black or Hispanic); more educated but reporting less household income; more likely to be single; and less likely to live in metropolitan areas (see Rosser, Oakes, Bockting, & Miner, 2007).

Measures

Measures used in this analysis included demographics, substance use, mental health variables, and sexual risk behaviors. The demographic variables were age, race (white vs non-white), ethnicity (Hispanic vs non-Hispanic), education (high school or less, some college, or college degree or more), relationship status (currently in marriage or civil union, previously married, and never married) and poverty defined as having an income of less than twice the 2003 poverty level based on family size.

Substance use variables included two dichotomous drug use variables (any use of marijuana during previous 3 months, and any use of illegal drugs other than marijuana over past three months), as well two dichotomous alcohol use variables (regular heavy alcohol use over past 3 months and binge drinking during last 30 days). Consistent with National Institute on Alcohol Abuse and Alcoholism (NIAAA, National Institute on Alcohol Abuse and Alcoholism, 2012) guidelines, regular heavy drinking was defined as more than four drinks a day or more than fourteen drinks a week for individuals born with male anatomy, and as more than three drinks a day or more than seven drinks a week for individuals born with female anatomy. Binge drinking,

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as suggested by the NIAAA, was defined as more than five drinks per day for those born with male anatomy, and more than four drinks per day for those born with female anatomy.

Mental Health variables included a dichotomous item indicating whether the respondent had ever attempted suicide, as well as overall and scale scores from the Brief Symptom Inventory (BSI 18, Derogatis, 1993; α=.94). Scale scores included measures of anxiety (α=.89), depression (α=.92), and somatization (α=.82), with higher scores indicating a greater number of endorsed symptoms. The Rosenberg Self-Esteem Scale was also included as a mental health variable (Crandal, 1973; α=.93).

Sexual behaviors assessed for the purposes of this study include the presence or absence of unprotected intercourse with a primary partner or with a non-primary partner in the past three months. Intercourse was defined as penis-anus or penis-vagina penetration, and must have included a penis or vagina with which the participant was born or a penis or vagina that was surgically constructed. In addition, the presence or absence of unprotected intercourse with any partner was calculated by summing unprotected intercourse with primary and non-primary partners.

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Procedures

All study procedures were approved by the University of Minnesota Institutional Review Board. Upon clicking on the web-based banner advertisement or link embedded in the posted message, the homepage with information about the study opened up. Using the computer interface, participants were screened and informed consent was obtained. Participants then

proceeded to take an online survey that took about 50 minutes to complete, for which they were offered a $30 online gift certificate. Of 1,373 surveys received, 1,229 (90%) were deemed complete and from unique individuals (see Miner, Bockting, Swinburne Romine, & Raman, 2012 for detail on de-duplication and validation protocol).

Participants were categorized as rural or non-rural based on the community description that they selected. Those who identified their community as either rural or small town were classified as "rural", while those who reported being from city of any size, a large town, or from a suburban area were classified as "non-rural". Fourteen individuals provided community descriptions that could not be categorized, and were not included in the analyses.

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Analyses

Differences between rural and non-rural transgender groups were calculated separately for transgender women (i.e., male-to-female transgender) and transgender men (i.e., female-to-male transgender). Proportions and means were used to characterize demographic, mental health, substance use and sexual risk items. A separate set of T tests was run for each block of variables: demographics, mental health, substance use, and sexual risk behavior. Significance level was set at p=.01 to reduce the chance of Type 2 error. Trends are reported below p<.05.

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Results

Demographic Characteristics

Differences in demographic characteristics between rural and non-rural transgender groups are shown in Table 1. Among transwomen, the average age was similar for rural (38.7 years) and non-rural (37.3 years) participants, and a similar proportion was single (43% rural v. 50% non-rural), poor (28% rural v. 22% non-rural), HIV-positive (2% rural v. 4% non-rural). No differences in transgender identities were found among transwomen by rural residency. A significantly lower proportion of rural transwomen was Hispanic (2% rural v. 6% non-rural) or had a college degree (33% rural v. 46% non-rural) than non-rural transwomen ($p<.01$). There was a trend ($p<.05$) for a higher percentage of rural transwomen to self-report as White (85% rural v. 78% non-rural) and single (50% rural v. 43% non-rural).

Among transmen, rural and non-rural participants were similar in mean age (both 26.2 years old), and with respect to White race (79% rural v. 76% non-rural), Hispanic ethnicity (both 6%), the proportion living in poverty (46% rural v. 42% non-rural), HIV-positive status (0% rural v. 1% non-rural), transgender identity status, and single relationship status (85% rural v. 87% non-rural). A trend ($p<.05$) was found for a smaller percentage of rural transmen holding a college degree than non-rural transmen (28% rural v 35% non-rural).

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Mental Health

The proportion of participants reporting a prior suicide attempt, and mean scores on the BSI Global Severity Index, BSI somatization scale, BSI depression scale, BSI anxiety scale, Rosenberg Self-esteem scales are shown in Table 2. A trend for a higher mean score on the BSI somatization scale was found among rural transwomen compared to non-rural transwomen ($p<.05$). Otherwise, no differences were found between rural and non-rural transwomen with respect to lifetime suicide attempts, BSI Global Severity Index, BSI depression scores, BSI anxiety scores, or self-esteem.

More noticeable differences in mental health items were found between rural and non-rural transmen. Although a similar proportion of rural (38%) and non-rural (41%) transmen reported a prior lifetime suicide attempt, rural transmen reported significantly higher scores on the BSI Global Severity Index, BSI somatization scale, and BSI depression scale ($p<.01$). In addition, rural transmen reported significantly lower self-esteem than their non-rural counterparts. The difference in BSI anxiety scale was nearly significant as well ($p=.02$).

Substance Use

Differences in substance use items by residency and stratified by transgender identity are shown in Table 3. Overall, no differences in substance use factors were found between rural and non-rural transwomen or transmen. A relatively small - but concerning - percentage of transwomen reported heavy alcohol use on a regular basis (6% for rural v. 7% for non-rural), binge drinking (10% for rural v. 7% for non-rural), and illicit drug use excluding marijuana (8% for rural v. 9%

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for non-rural) in the past 3 months. Rates of heavy alcohol use (7% for rural v. 12% non-rural), binge drinking (10% for rural and non-rural) and non-marijuana drug use (7% for rural v. 13% for non-rural) were slightly higher among transmen. Reports of marijuana use for both transwomen (15-21%) and transmen (29-32%) were high.

Sexual Risk Behavior

Similar to substance use, no differences were found by residency in sexual risk behavior among transwomen and transmen (Table 4). However, the proportion of unprotected sex with any, primary, and other sexual partners in the past 3 months is noticeably high for rural (42% any; 40% primary; 39% other) and non-rural (45% any; 44% primary; 32% other) transwomen. In comparison, a lower proportion of rural transmen report unprotected sex with any (16%), primary (16%), or other (13%) sexual partners.

Discussion

This study is the first study, to the best of our knowledge, to directly compare the mental health, substance use, and sexual risk behaviors of rural and non-rural transwomen and transmen, made possible by the use of the Internet to recruit participants into the study. Primary findings include: (1) significant differences in mental health between rural and non-rural transmen, (2) relatively low levels of binge drinking across groups, however high levels of marijuana use, and (3) high levels of unprotected sex across all types of sex partners among transwomen. Each of these findings is discussed in greater detail below.

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Rural residents face a number of health disparities compared to their non-rural counterparts (Eberhardt & Pamuk, 2004). These disparities may be particularly magnified for LGBT persons, who report high levels of lifetime suicide attempts in this and other studies (for a review, see Horvath, Remafedi, Fisher, & Walrath, 2012). A recent report by the Institute of Medicine (Committee on Lesbian Gay Bisexual and Transgender Health Issues and Research Gaps and Opportunities et al., 2011) reported that:

"LGBT people face barriers to equitable health care that profoundly affect their overall well-being. Understanding outcome disparities, provider attitudes and education, ways in which the care environment can be improved, and the experiences of LGBT individuals seeking care would provide a base from which to address these inequities (p. S-7)."

The results of this study suggest that transmen residing in rural areas may face the greatest barriers to care and are in need of mental health services. Achieving this is particularly difficult since transgender persons are considered a hidden population (Meyer, 2001), and may be difficult to reach in stigmatizing settings. A possible approach to deliver mental health services to rural or hidden transmen is through the use of telemedicine (Madison et al., 2012). Despite continued concerns over its cost and the benefit of telemedicine approaches over face-to-face approaches, most reviews of telemedicine show that it can be an effective approach to healthcare delivery (Ekeland, Bowes, & Flottorp, 2010). Regardless of approach, the results of this study support the call for greater research to determine best practices for strengthening healthcare services for LGBT populations (Committee on Lesbian Gay Bisexual and Transgender Health

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Issues and Research Gaps and Opportunities et al., 2011) and suggest that this may be particularly urgent with respect to mental health services for rural transmen.

Binge drinking is common in the US, with one in six adults reporting binge drinking in the previous 30 days and doing so on average 4 times per month (Kanny, Liu, Brewer, Garvin, & Balluz, 2012). In the same report, binge drinking was twice as common in men as women (Kanny et al., 2012). In comparison, binge drinking in the past 30 days was reported by less than 10 percent of participants, regardless of gender identity (transwomen or transmen) or residency (rural or non-rural). Although reported binge drinking was relatively low in this sample, recent marijuana use was notably high. Nearly one-third of rural and non-rural transmen reported marijuana use in the past 30 days, compared to 6% of US adults who reported marijuana use in the past month (SAMHSA, 2008). Differences in substance use rates between rural and urban transgender persons and those found among representative samples of the US population may be due to differences in study design and sampling strategies. However, fully understanding the degree of sampling bias in studies of transgender persons is beyond current sampling techniques (i.e. it is not feasible to generate an accurate sampling frame of transgender persons). An alternative explanation to sampling bias is that transgender populations have substance use norms that are more similar to those of men who have sex with men (MSM) than the general population. A probability sample of MSM residing in four cities showed that 19% of men reported frequent drug use and 9% reported heavy-frequent alcohol use (Stall et al., 2001), which is similar to findings reported in this study of transgender persons. These results add to the mounting evidence that transgender persons have unique norms and risks, and services will need to be tailored to meet the needs of this population.

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Similar to prior studies (Edwards et al., 2007; Grant et al., 2011), this sample of transwomen appear to be at substantial risk for HIV infection. It is noteworthy that rural transwomen had equivalent levels of sexual risk behavior as non-rural transwomen, who may have greater access to sex partners. These results suggest that transwomen, regardless of residency, are in urgent need of HIV risk reduction services. However, while such services may be available in large population centers, they are likely less available in rural areas. A possible solution to delivering HIV prevention services to rural transwomen is through the use of technology, including Internet and mobile devices. However, a recent analysis of transgender-related webpages showed very few webpages that contained intervention services for transgender persons (Horvath, Iantaffi, Grey, & Bockting, 2012). Technology-based approaches to reducing sexual risk behavior among LGBT populations are promising (Noar, Black, & Pierce, 2009), however studies are needed to assess their efficacy among rural transgender populations.

This study is limited in several ways. First, participants were recruited using a convenience sampling strategy via the Internet. Therefore the results are not generalizable to all transgender persons or transgender persons who do not use the Internet. Second, we did not conduct statistical tests to analyze differences between mental health, substance use, and sexual risk factors between transwomen and transmen. These differences are examined in a forthcoming study (Bockting et al., in press) and the focus of this paper was to explore differences between transgender persons residing in rurural and non-rural areas.

Despite these limitations, this study makes an important contribution to the literature by being the first to compare groups of rural and non-rural transgender persons across a number of mental

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and physical health factors. The results confirm that mental health services are needed in rural areas, particularly for transgender men, and there is an urgent need to target rural transwomen with sexual prevention interventions to reduce their risk for HIV and other sexual transmitted infections. Finally, greater research is needed to understand the interplay and cumulative effect of mental health, substance use, and sexual risk factors on healthcare utilization among, and overall wellbeing of, rural transgender populations.

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Table 1. Demographic Characteristics by Residency

	Rural		Non-rural			
	%	N	%	N	t	Sig
Transwomen		214		478		
Age (Mean, SD[a])	38.72	12.78	37.28	12.09	-1.43	.15
White race	85	181	78	372	-2.16	.03
Hispanic/Latino ethnicity	2	4	6	29	2.93	.00
Poverty[b]	28	59	22	102	-1.66	.10
HIV-positive	2	2	4	12	1.21	.23
	%	N	%	N	χ^2	Sig
Transgender identity					2.95	.40
Transsexual	37.7	80	41.5	197		
Cross-dresser/transvestite	31.1	66	25.1	119		
Drag queen	6.6	14	8.0	38		
Other male-to-female	24.5	52	25.5	121		
Education					11.91	.00
High school or less	18	38	11	54		
Some college	50	106	43	206		
College degree or higher	33	70	46	218		
Relationship status					6.43	.04
Married/ Civil Union	35	74	25	121		
Widow/Divorce/Separated	23	49	25	118		
Single, never married	43	91	50	239		

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	%	N	%	N	*t*	Sig
Transmen		130		393		
Age (Mean, SD[a])	26.22	8.690	26.22	7.143	-0.01	.99
White race	79	103	76	299	-0.74	.46
Hispanic/Latino ethnicity	6	8	6	24	-0.02	.99
Poverty[b]	46%	58	42	160	-0.86	.39
HIV-positive	0%	0	1	2	.72	.47
	%	N	%	N	χ^2	Sig
Transgender identity					0.59	.90
Transsexual	50.0	65	49.5	192		
Cross-dresser/transvestite	6.2	8	4.6	18		
Drag king	9.2	12	10.3	40		
Other female-to-male	34.6	45	35.6	138		
Education					6.14	.05
High school or less	19	25	11	45		
Some college	53	69	53	209		
College degree or higher	28	36	35	139		
Relationship status					2.64	.27
Married/ Civil Union	12	15	7	29		
Widow/Divorce/Separated	4	5	6	22		
Single, never married	85	110	87	341		

[a] Standard deviation; [b] Income less than 2X the 2003 HHS guidelines for poverty

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Table 2. Mental health factors by residency

Mental Health	Rural		Non-rural			
	Mean	SD[b]	Mean	SD	t	Sig
Transwomen						
Suicide attempt (Lifetime)	25%	*n*=49	27%	*n*=116	-0.40	.69
BSI 18 Global Severity Index[a]	18.21	13.47	16.07	14.39	-1.76	.08
BSI 18 Somatization[a]	3.90	4.24	3.17	3.81	-2.05	.04
BSI 18 Depression[a]	8.22	6.59	7.68	6.15	-0.98	.33
BSI 18 Anxiety[a]	6.09	5.41	5.22	5.37	-1.88	.06
Rosenberg Self-Esteem Scale	5.01	1.45	5.11	1.38	0.81	.42
Transmen						
Proportion attempted suicide	38%	*n*=40	41%	*n*=145	-0.59	.55
BSI 18 Global Severity Index[a]	23.55	16.21	18.42	14.01	-2.94	.00
BSI 18 Somatization[a]	5.77	5.08	4.41	4.45	-2.67	.01
BSI 18 Depression[a]	9.43	7.14	7.32	5.94	-2.77	.01
BSI 18 Anxiety[a]	8.34	6.58	6.70	5.48	-2.33	.02
Rosenberg Self-Esteem Scale	4.54	1.43	4.95	1.35	2.69	.01

[a] Raw score; [b] Standard deviation

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Table 3. Substance use factors (past 3 months) by residency

	Rural		Non-rural			
	%	N	%	N	t	Sig
Transwomen		195		434		
Regular Heavy Alcohol Use	6	12	7	32	0.56	.58
Binge Alcohol Use	10	19	7	29	-1.25	.21
Marijuana use	15	29	21	89	1.74	.08
Non-Marijuana Drug use	8	16	9	40	0.41	.68
Transmen		110		357		
Regular Heavy Alcohol Use	7	8	12	41	1.4	.16
Binge Alcohol Use	10	11	10	35	-0.04	.97
Marijuana use	29	32	32	114	0.56	.58
Non-Marijuana Drug use	7	8	13	46	1.86	.06

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Table 4. Sexual risk behaviors (past 3 months) by residency

	Rural		Non-rural			
	%	N	%	N	t	Sig
Transwomen						
Unprotected sex with Primary partner	40	51	44	108	0.57	.57
Unprotected sex with Other partner	39	27	32	58	-0.92	.36
Unprotected sex with Any partner	42	69	45	155	0.52	.60
Transmen						
Unprotected sex with Primary partner	16	13	19	47	0.67	.50
Unprotected sex with Other partner	13	5	19	26	0.79	.43
Unprotected sex with Any partner	16	17	21	66	1.00	.32

Note: Percentages are based on the number of individuals with partners of the given type

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